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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/762,095 | 01/21/2004 | Aaron Schipper | TCI-P0003 | 4559 |
| 27268 | 7590 | 10/17/2006 | EXAMINER | |
| BAKER & DANIELS LLP 300 NORTH MERIDIAN STREET SUITE 2700 INDIANAPOLIS, IN 46204 | | | | KURTZ, BENJAMIN M |
| ART UNIT | | PAPER NUMBER | | |
| | | 1723 | | |

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|-----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/762,095 | SCHIPPER, AARON |
| | Examiner | Art Unit |
| | Benjamin Kurtz | 1723 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 21 August 2006.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,3,5 and 21-42 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,3,5 and 21-42 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 21 January 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 29 is objected to because of the following informalities: Claim 29 depends from claim 30; for examination purposes claim 29 is assumed to depend from claim 28.
2. Claims 22 and 34 are objected to because of the following informalities: Spelling error, 'axes' should be 'axis'. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 21-29 and 31-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannion et al US 3 668 822 in view of Elmi US 5 500 132. Mannion teaches an apparatus for removing air or debris from a flow of liquid, the apparatus comprising: a shell (31) having an inlet (32), and outlet (33), and an inner cavity in fluid communication with each of the inlet and outlet, and an elongate coalescing medium assembly (37) disposed within the cavity of the shell the assembly having a wire mesh tube having ends, a longitudinal axis extending between the ends and a side wall extending between the ends, and the flow of liquid being directed to enter and exit the side walls of the plurality of the wire mesh tube (fig. 2, col. 3, lines 35-37). Mannion does not teach the coalescing medium assembly including a plurality of wire mesh tubes parallel to each other. Elmi teaches a coalescing medium assembly including a

plurality of wire mesh tubes oriented substantially parallel to each other (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plurality of tubes as taught by Elmi because multiple tubes provides for the lighter material that did not coalesce on the first tube to contact subsequent tubes (col. 4, lines 34-43).

Regarding claims 27, Mannion in view of Elmi teaches the ends of the wire mesh tube is positioned at first and second longitudinal positions along the longitudinal axis, and the outlet has a longitudinal position between the first and second longitudinal positions of the ends (fig. 2, Mannion); Elmi further teaches the coalescing medium assembly further includes a coupling element (the cubic frame) that surrounds and holds together the plurality of wire mesh tubes (fig. 2, Elmi); and Elmi further teaches the coalescing medium assembly includes a band wrapped around the coupling element and holding the coupling element in engagement with the plurality of wire mesh tubes (fig. 2, Elmi).

Regarding claim 21, Mannion teaches an apparatus for removing air or debris from a flow of liquid, the apparatus comprising: a shell (31) having an inlet, an outlet, and an inner cavity in fluid communication with each of the inlet and the outlet, and a tube positioned within the inner cavity of the shell, the tube having a longitudinal axis having a surface with a plurality of apertures and an air vent (42) positioned to release air that is removed from the flow of liquid by the tube (fig. 2). Mannion does not teach a plurality of tubes in the cavity of the shell. Elmi teaches a plurality of tubes oriented substantially parallel to each other, each tube having a longitudinal axis and the tubes

having a surface with a plurality of apertures (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plurality of tubes as taught by Elmi because multiple tubes provides for the lighter material that did not coalesce on the first tube to contact subsequent tubes (col. 4, lines 34-43).

Regarding claims 22-26, Mannion further teaches the flow of liquid flows into and out of the tubes in a direction substantially transverse to the longitudinal axis of the tubes (fig. 2); the air vent is positioned above the tube (fig. 2); the shell further comprises a bottom section including an aperture configured to permit removal of debris that settles out of the flow of liquid (fig. 2); the shell further comprises a bottom section (45) that is removably attached to the remainder of the shell (fig. 2); and the shell further comprises a bottom section including a valve (45) configured to permit selective removal of debris that settles out of the flow of liquid (fig. 2).

Regarding claim 31, Mannion teaches an apparatus for removing air or debris from a flow of liquid, the apparatus comprising: a shell (31) having an inlet, and outlet, and an inner cavity in fluid communication with the inlet and the outlet, and one elongate coalescing medium assembly (37) disposed within the inner cavity of the shell, the coalescing medium assembly including: an elongate core element. Mannion does not teach a plurality of wire mesh tubes. Elmi teaches a plurality of tubes having a longitudinal axis, the tubes cooperating to define an interior space therebetween, and an elongate core element being positioned with the interior space oriented substantially parallel to the plurality of tubes (the center tube is the elongate core element) (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was

made to use the plurality of tubes as taught by Elmi because multiple tubes provides for the lighter material that did not coalesce on the first tube to contact subsequent tubes (col. 4, lines 34-43).

Regarding claims 32-33, Mannion further teaches an end cap (50) including a recess where an end of the elongate core element is received in the recess (fig. 2); and Mannion and Elmi teach the elongate core element comprises a cylindrical tube (fig. 2, both references).

Regarding claim 34, Elmi teaches the plurality of tubes but does not teach the wire mesh tubes arranged in a substantially circular pattern when viewed along the longitudinal axis. It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the tubes in a circular pattern so the plurality of tubes will better fit within the shell as taught by Mannion having a circular shape.

Regarding claim 35, Mannion teaches a wire mesh tube but does not teach the wire mesh having substantially horizontal wires and interconnected substantially vertical wires. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any orientation of wire mesh that suitably provides good separation of air and debris from the fluid flow. Applicant also admits as prior are horizontal wire and interconnected vertical wire (paragraph [0002]).

Regarding claim 36, Mannion teaches an apparatus for removing air or debris from a flow of liquid, the apparatus comprising: a shell (31) having an inlet, and outlet, and an inner cavity in fluid communication with the inlet and the outlet, and one elongate coalescing medium assembly (37) disposed within the inner cavity of the shell,

the assembly comprising a wire mesh tube having a longitudinal axis, where the flow of liquid flows in a direction substantially transverse to the longitudinal axis of the mesh tube (fig. 2). Mannion does not teach a plurality of wire mesh tubes. Elmi teaches a plurality of tubes oriented substantially parallel to each other, each tube having a longitudinal axis extending between the ends (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plurality of tubes as taught by Elmi because multiple tubes provides for the lighter material that did not coalesce on the first tube to contact subsequent tubes (col. 4, lines 34-43).

Regarding claims 37-42, Mannion further teaches the ends of the wire mesh tube are positioned at first and second longitudinal positions along the longitudinal axis and the outlet has a longitudinal position between the first and second longitudinal positions of the ends (fig. 2); an air vent (42) positioned above the wire mesh tube (fig. 2); the shell further comprises a bottom section (45) that is removably attached to the remainder of the shell (fig. 2); the shell further comprises a bottom section including a valve (45) configured to selectively remove debris that settles out of the flow of liquid (fig. 2); Elmi further teaches the coalescing medium assembly comprises an elongate core element (the center tube of the assembly) oriented substantially parallel to the plurality of tubes (fig. 2, Elmi); and Mannion further teaches the wire mesh tube includes a sidewall extending between the ends and the liquid enters and exits the sidewalls while passing through the tubes (fig. 2).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mannion (822) in view of Elmi (132) as applied to claim 1 above, and further in view of Muller US

4 443 346. Regarding claim 3, Mannion in view of Elmi teach the coalescing medium assembly includes an elongate core element substantially surrounded by the tubes and oriented substantially parallel to the tubes the core element having: a longitudinal axis extending in a longitudinal direction but does not teach a substantially continuous side surface facing in a lateral direction substantially perpendicular to the longitudinal direction. Muller teaches an elongate core element (5) having a longitudinal axis, at least one substantially continuous side surface facing in a lateral direction substantially perpendicular to the longitudinal direction and a plurality of tubes (1) surrounding the core element (5) and oriented substantially parallel to the core element (5) (fig. 1 and 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assemblies with the teachings of Muller (346) because the central tube serves for supporting the filter tubes (col. 2, line 48).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mannion (822) in view of Elmi (132) in view of Muller (346) as applied to claim 3 above, and further in view of Blace US 4 051 033. Mannion in view of Elmi in view of Muller teach the apparatus of claim 3 having an end cap (50, of Mannion) but does not teach an end cap including a plurality of recesses. Blace (033) further discloses an end cap (16) including a plurality of recesses (formed by member (94), fig. 9 and 10, col. 4, lines 28-34) each member (10) being received in a recess. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the end cap of Blace because the end cap secures the tube in place (col. 4, lines 28-34).

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mannion (822) in view of Elmi (132) as applied to claim 1 above, and further in view of Basse et al. US 4 985 182. Mannion in view of Elmi teach the apparatus of claim 1 but do not teach a wire mesh tube including a projection extending from an inner surface of the tube. Basse teaches a wire mesh tube (10) including a projection (16) extending from an inner surface of the tube (10) and into an interior of the tube (10) (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the projection (16) of Basse (182) with the assembly of Wheeler (913) because the projections define flow paths making good ventilation in the cross and longitudinal directions (col. 1, lines 62-66).

Response to Arguments

7. Applicant's arguments with respect to claim 1 and 21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Kurtz whose telephone number is 571-272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.